

Claims Listing:

1 - 17. (Cancelled)

18. (Previously Presented) A method for producing a vehicle axle comprising:
directing a first blank (1) through a furnace (2) and heating the blank (1) to a working temperature;
directing the first blank (1) between a pair of rollers (3, 4) having profiled surfaces and thereby forming the first blank (1) into an intermediate product having a predetermined profile along a longitudinal extent thereof;
feeding the first blank (1) to a forging press having a number of cooperating die pads, and working the first blank (1) by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof;
placing in connection with the hat profiled first blank (1), a second blank (14) having essentially the same profile as the hat profile of the first blank (1) in the dividing plane of the cooperating die pads; and
joining the first (1) and the second blank (14) together at respective edges thereof and forming a composite vehicle axle (18).

19. (Previously Presented) The method as recited in claim 18, wherein at least the first blank is forged vertically with respect to a principal plane in which the composite vehicle axle (18) is intended to be used.

20. (Previously Presented) The method as recited in claim 18, wherein the forging operation comprises a first step in which a pair of first cooperating die pads form the material in the first blank such that the first blank acquires a predetermined, varying height in a vertical plane along a longitudinal extent thereof and the first blank further acquires a basic principal shape in the principal plane in which the composite vehicle axle (18) is intended to be used.

21. (Previously Presented) The method as recited in claim 20, wherein the forging operation further comprises an additional step in which a pair of second cooperating die pads form the material in the first blank to a predetermined, varying thickness along a side surface, bottom surface and upper edge surface of the profile along a longitudinal extent thereof.

22. (Previously Presented) The method as recited in claim 21, wherein the additional step of the forging operation is repeated at least one time in successive die pads until the first blank has acquired a final shape.

23. (Previously Presented) The method as recited in claim 18, wherein the second blank is preformed in one of a separate forging operation and a joint forging operation to have substantially the same profile as the hat profile of the first blank in a dividing plane of the die pads.

24. (Previously Presented) The method as recited in claim 23, wherein the first and the second blanks are formed in a joint forging operation in which the second blank is formed to the same profile as the hat profile of the first blank in a dividing plane of the die pads.

25. (Previously Presented) The method as recited in claim 18, wherein the first and the second blanks are heated in a pair of separate induction furnaces and then placed between a pair of cooperating die pads in a press and joined together by forge welding.

26. (Currently amended) ~~The method as recited in claim 18, A method for producing a vehicle axle comprising:~~

directing a first blank (1) through a furnace (2) and heating the blank (1) to a working temperature;

directing the first blank (1) between a pair of rollers (3, 4) having profiled surfaces and thereby forming the first blank (1) into an intermediate product having a predetermined profile along a longitudinal extent thereof;

feeding the first blank (1) to a forging press having a number of cooperating die pads, and working the first blank (1) by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof;

placing in connection with the hat profiled first blank (1), a second blank (14) having essentially the same profile as the hat profile of the first blank (1) in the dividing plane of the cooperating die pads; and

joining the first (1) and the second blank (14) together at respective edges thereof and forming a composite vehicle axle (18),

wherein the first and the second blank are simultaneously heated using heating means introduced between the first and second blank, which blanks are held between a pair of cooperating die pads in a press and the first and second blank are joined together by forge welding.

27. (Previously Presented) The method as recited in claim 26, wherein the heating is effected by means of one of induction elements, an induction furnace, and a gas flame.

28. (Previously Presented) The method as recited in claim 18, further comprising:
cutting flashes along the joined edges of the profile in the same operation as for joining
together the first and second blank, the profile acquiring a predetermined varying width along a
longitudinal extent thereof.

29. (Previously Presented) The method as recited in claim 18, wherein the vehicle axle
comprises a first section having a cross section substantially taking the form of a hat profile of a
predetermined, varying width, height and material thickness along a length thereof and a second
section having an essentially constant material thickness and being joined together with the first
section along side surfaces of the hat profile.

30. (Previously Presented) The method as recited in claim 29, wherein the vehicle axle is
constructed from a microalloyed steel.

31. (Previously Presented) The method as recited in claim 29, wherein the vehicle axle
constitutes a front axle beam.

32. (Previously Presented) The method as recited in claim 31, wherein a maximum
material thickness of the front axle beam is obtained in connection with fastening points and
regions which are to be subjected to external forces and moments.

33. (Previously Presented) The method as recited in claim 32, wherein the cross section of
the front axle beam has essentially the same outer contours in both the vertical and horizontal
planes as a conventionally forged, solid beam.

34. (Previously Presented) A method for producing a vehicle axle comprising:
directing a first blank (1) through a furnace (2) and heating the blank (1) to a working
temperature;

directing the first blank (1) between a pair of rollers (3, 4) having profiled surfaces and
thereby forming the first blank (1) into an intermediate product having a predetermined profile
along a longitudinal extent thereof;

feeding the first blank (1) to a forging press having a number of cooperating die pads, and
working the first blank (1) by die forging to form a substantially finished product having a cross
section substantially in the form of a hat profile of predetermined height, width and material
thickness along a length thereof;

placing in connection with the hat profiled first blank (1), a second blank (14) having a
substantially constant material thickness; and

joining the first (1) and the second blank (14) together at respective edges thereof and
forming a composite vehicle axle (18), with the second blank (14) forming a lid for the first
blank (1).

35. (Currently amended) A method for producing a vehicle axle comprising:

directing a first blank (1) through a furnace (2) and heating the blank (1) to a working temperature;

directing the first blank (1) between a pair of rollers (3, 4) having profiled surfaces and thereby forming the first blank (1) into an intermediate product having a predetermined profile along a longitudinal extent thereof;

feeding the first blank (1) to a forging press having a number of cooperating die pads, and working the first blank (1) by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof;

placing in connection with the hat profiled first blank (1), a second blank (14) that is substantially flat in that [[it]] said second blank lacks a cavity but that otherwise matches the contours of an upper, joining surface of the first blank (1); and

joining the first (1) and the second blank (14) together at respective edges thereof and forming a composite vehicle axle (18);

wherein the vehicle axle comprises said first blank having a cross section substantially taking the form of a hat profile and said second blank that forms a lid for the first blank and that is joined together with the first blank along side surfaces of the hat profile.

36. (New) A method for producing a vehicle front axle comprising:

directing a first blank through a furnace and heating the blank to a working temperature;

directing the first blank between a pair of rollers having profiled surfaces and thereby forming the first blank into an intermediate product having a predetermined profile along a longitudinal extent thereof;

feeding the first blank to a forging press having a number of cooperating die pads, and working the first blank by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof;

directing a second blank through a furnace and heating the second blank to a working temperature;

directing the second blank between a pair of rollers having profiled surfaces and thereby forming the second blank into an intermediate product having a predetermined profile along a longitudinal extent thereof;

feeding the second blank to a forging press having a number of cooperating die pads, and working the second blank by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof;

placing in connection with the hat profiled first blank the second blank, which has essentially the same profile as the hat profile of the first blank in the dividing plane of the cooperating die pads; and

joining the first and the second blank together at respective edges thereof and forming a composite vehicle front axle.